REMARKS

The Office action dated July 9, 2008, and the references cited have been fully considered. In response, please enter the amendments and consider the remarks presented herein. Reconsideration and/or further prosecution of the application is respectfully requested.

Applicants appreciate the Office reconsidering its previous position and re-opening prosecution. Applicants herein are trying to put the case in condition for allowance, and respectfully request the Office contact Applicants' representative should it be helpful to finalize this case to get it allowed and issued.

In regards to the § 101 patentable subject matter rejections, Applicants appreciate the Office working with Applicants to ensure that all claims are directed to patentable subject matter under the current interpretations of the laws.

In regards to the first claims set consisting of independent claim 1 and its dependent claims 2-5, Applicants respectfully submit that proper claim construction would lead to a determination that the claims are directed to patentable subject matter, as they are directed to an apparatus which includes some hardware component and not merely software. Applicants submit that a lock manager could be one or more processes running on hardware – but not software alone. However, to further prosecution rather than arguing semantics, Applicants have amended independent claim 1 to recite a processor and memory; and therefore, expressly recites a hardware component overcoming the Office's cautious concerns. For at least these reasons, claims 1-5 recited patentable subject matter, and Applicants respectfully request the Office withdraw the § 101 rejections of claims 1-5.

In regards to means-plus-function format claims 10-1 and 22-26, Applicants respectfully traverse these claims as they each recite a hardware component, and are not merely software. Applicants do not believe they need to be amended to clarify this position based on the exemplary claim construction performed by the Federal Circuit in *State Street Bank & Trust Co.*

v. Signature Financial Group Inc., 47 USPQ2d 1596, 1599 (Fed. Cir. 1998) ("*State Street Bank*"). First, Applicants position is very basic – software is not a means for doing anything, rather it may be a partial means, such as an embodiment being executed via hardware. Therefore, Applicants believe that considering any of these claims to be pure software would NOT be a proper construction of thereof. Additionally, Applicants also point out to the Office that FIGs. 5A and 5B illustrate a couple of an extensible number of hardware configurations, albeit, that may be configured using software/firmware etc. But software/firmware etc. in such a scenario would only be a partial means for doing the recited step or function, and that a proper claim construction would be, for example, the hardware configured to perform the recited step or function.

Applicants further note that this position is consistent with the Federal Circuit in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*, 47 USPQ2d 1596, 1599 (Fed. Cir. 1998) ("*State Street Bank*"). In *State Street Bank*, the Federal Circuit construed the limitations of the claim at issue of not merely to be directed to software, but to be apparatus claims (i.e., "second means" was properly construed to be "an arithmetic logic circuit configured to retrieve information from a specific file…", and not "software for retrieving information from a specific file…"). *Id.* Remember *State Street Bank* is an important precedential case discussing what is patentable subject matter. Applicants note that the disclosure of the instant case states that the phrase 'means for xxx' *typically includes* computer-readable medium or media containing computer-executable instructions for performing xxx," (*emphasis* added) which is accurate as it includes the word "typically" as there are other embodiments, and one embodiment includes a processor operating according to such computer-executable instructions. Also, these claim limitations do not recite "a partial means for …" but rather recite "means for …." Applicants are confused by how software alone can perform the recited functionality (e.g., "means for…"), without the requite hardware to execute the software? Therefore, Applicants respectfully submit that a proper claim construction of claims 10-11 and 22-26, consistent with the Federal Circuit in

State Street Bank for its apparatus claims, excludes merely software; but rather requires apparatus limitations, such as, but not limited to, one or more processors and memory configured to perform operations according to computer-readable medium containing computer-executable instructions or other hardware embodiments. In other words, not "partial means for..." (e.g., software in one embodiment), but "means for..." (e.g., hardware operating according to software) in one embodiment. Finally, Applicants further note that based on these arguments, a claim construction of pure software would be excluded based on file wrapper estoppel. For at least this clarification of the proper claim construction of these claims and that proper claim construction thereof includes a hardware component and excludes pure software, Applicants respectfully request the Office withdraw the § 101 rejections of these claims.

For at least these reasons, Applicants respectfully submit that all claims recite patentable subject matter, and Applicants respectfully request the Office withdraw all § 101 rejections.

Next, all claims 1-26 stand rejected under 35 USC § 102(b) as being anticipated by Pedro Trancoso and Josep Torrellas, "The Impact of Speeding up Critical Sections with Data Prefetching and Forwarding, IEEE 1996, ("Trancoso et al."). Applicants respectfully traverse these rejections as all claims recite a limitation that require the lock manager to receive the protected data in a release message and/or for the lock manager to send the protected data in a grant message. Trancoso et al. neither teaches nor suggests this/these recited limitation(s), and therefore, all claims are allowable over Trancoso et al.

Applicants appreciate the Office's avocation that Trancoso et al. teaches this recited feature, but Applicants respectfully request the Office reconsider its position. Applicants admit that Trancoso et al. teaches a lock manager that never touches the protected data. Trancoso et al. teaches prefetching of data ***after acquiring a lock*** and entering a critical section by the already granted process, and teaches forwarding data from a process to a next process ***before releasing the lock***. Therefore, the lock manager, which Trancoso et al. teaches, never receives or

otherwise touches the protected data. FIG. 2 expressly shows that Applicants interpretation of Trancoso et al. is correct, but first, Applicants will refer the Office to other statements therein leading up to this example.

"The first optimization attempts to reduce to one the number of access to main memory seen by the processor in the critical section. This is done by prefetching ***right after the[y] acquire*** all the shared variables that are read in the critical section." Trancoso et al., page III-80 after heading "Description of the Optimizations" (***emphasis added***). In other words, the prefetching is performed after acquiring the lock, and the granted process does not receive the protected data from the lock manager. This is optimization 1 (Pref) "*Whenever a lock is acquired, prefetch all the shared data that will be read within the critical section.*" Again, the prefetching occurs after the lock is acquired, and the lock manager never touches nor communicates any protected data. If Trancoso et al. taught that the lock manager delivered the protected data to the granted process, there would be no reason, nor need, to prefetch the protected data as the granted process would already have the protected data.

The second optimization is the forwarding of data by the releasing process to a next process *before it releases the lock.* "The second optimization attempts to hide the single memory access seen by the processor in the first optimization. Indeed, the data to be communicated is forwarded from the first processor to the second ***right before the first processor releases the lock***." *Id.* at page III-80, col. 1, last paragraph (***emphasis added***). In other words, before, releasing the lock, the data is communicated to the second processor – and the data is NOT communicated via the lock manager. This is optimization 2 (Forw) "*Whenever a lock is acquired, prefetch all the shared data that will be read within the critical section.* ***Right before executing the release operation****, if there is a processor waiting to acquire the lock, forward that same data to the waiting processor.*" (***Emphasis added***).

Optimizations 3 and 4 similar teach that all touching of the protected data occur after acquiring the lock or after releasing it, but neither teaches nor suggests communicating the

protected data via the Trancoso et al.'s lock manager. Optimization 3 (ExPref) is "***Whenever a lock is acquired****, prefetch in exclusive mode all the shared data that will be written within the critical section, and prefetch all the remaining shared data that will be read within critical section.*" (***Emphasis added***.) Again, the data is prefetched after the lock is acquired from Trancoso et al.'s lock manager; and the protected data is not received from Trancoso et al.'s lock manager. Optimization 4 (ExForw) is "*Whenever a lock is acquired, prefetch in exclusive mode all the shared data that will be written within the critical section, and prefetch all the remaining shared data that will be read within the critical section.* ***Right before executing the release operation****, if there is a processor waiting to acquire the lock, forward to the processor in exclusive mode all the written shared data and forward to the processor the rest of the read shared data.*" (***Emphasis added***.) Again, the data is communicated before the lock is released to Trancoso et al.'s lock manager; and the protected data is not communicated via Trancoso et al.'s lock manager.

Applicants' interpretation is confirmed by the pseudo code on page III-81, col. 2, which teaches that a prefetch statement is inserted in the critical section before any non-prefetch statement (which means that it is executed in the critical code *after the critical code acquires the lock*); and teaches that a forward statement is inserted in the critical section *right before it releases the lock*. Again, this teaches that Trancoso et al.'s lock manager never touches or communicates the protected data.

Finally, FIG. 2 illustrates an example of the operation of Trancoso et al.'s teachings and optimizations which shows that the prefetching only occurs ***after the code acquires the lock from Trancoso et al.'s lock manager*** ["LOCK(1)" means acquisition of the lock from Transcoso et al.'s lock manger]; and that forwarding of protected data only occurs ***before the code releases the lock to Trancoso et al.'s lock manager*** ["UNLOCK(1)" – means releasing the lock to ff Transcoso et al.'s lock manger].

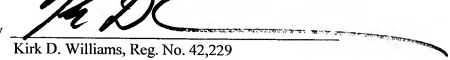
For at least these reasons, Trancoso et al. neither teaches nor suggests all of the recited limitations in any pending claim, and therefore, all claims are believed to be allowable over Trancoso et al. Additionally, a*ssuming the Office performed its duty as required by MPEP § 706 and 37 CFR 1.104(c)(2) and cited the best art available, then all claims are allowable over the best prior art available.* For at least these reason, Applicants respectfully request the Office withdraw all rejections, allow all claims, and pass the case to issuance.

Final Remarks. In view of the above remarks and for at least the reasons presented herein, all pending claims are believed to be allowable over all prior art of record, the application is considered in good and proper form for allowance, and the Office is respectfully requested to issue a timely Notice of allowance in this case. Applicant requests any and all rejections and/or objections be withdrawn. If, in the opinion of the Office, a telephone conference would expedite the prosecution of the subject application, the Office is invited to call the undersigned attorney, as Applicants are open to discussing, considering, and resolving issues.

Applicants request a one-month extension of time is required. Should a different extension of time be deemed appropriate, Applicants hereby petition for such deemed extension of time. Applicants further authorize the charging of Deposit Account No. 501430 for any fees that may be due in connection with this paper (e.g., claim fees, extension of time fees) as required in addition to the payment made herewith using EFS-Web.

Respectfully submitted,
The Law Office of Kirk D. Williams

Date: November 8, 2008

By 

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